

**Environmental
Resources
Management**

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20 December 2004

Mr. Larry Patterson, P.E.
Environmental Manager
Arkema, Inc.
6400 N.W. Front Avenue
Portland, Oregon 97210



Subject: Surface Soil Sampling and Analysis Work Plan
Lots 1 and 2
Arkema, Inc. Portland Facility

Dear Larry:

Environmental Resources Management (ERM) has prepared this Surface Soil Sampling and Analysis Work Plan on behalf of Arkema, Inc. (Arkema, formerly ATOFINA Chemicals, Inc.) to present the scope and schedule for surface soil sampling activities on Lots 1 and 2 at the Arkema facility in Portland, Oregon (Figure 1). The surface soil investigation will be conducted in response to a letter from the Oregon Department of Environmental Quality (ODEQ), dated 5 November 2004, which requested additional investigation and screening of surface soil on Lots 1 and 2. This work will be conducted in accordance with relevant sample collection and analysis procedures described in the Field Sampling Plan in the *Elf Atochem Acid Plant Area Remedial Investigation and Feasibility Study Work Plan* (Exponent 1998).

BACKGROUND

The Arkema facility is located at 6400 N.W. Front Avenue in the Northwest Industrial Area of Portland, Oregon. The plant operated as a chemical manufacturing facility for over 50 years until 2001. The plant is no longer in operation and has been decommissioned.

Lots 1 and 2 represent the two northernmost lots of the property currently owned by Arkema. Lots 1 and 2 account for approximately 15 acres of the overall Arkema property (Figure 2). The eastern border of Lots 1 and 2 extends along the top of the Willamette River bank (no bank soils are included in Lots 1 and 2). A more detailed description of the

physical setting and operational history of Lots 1 and 2 are provided in the *Environmental Summary Report, Lots 1 and 2, ATOFINA Chemicals, Inc., Portland, Oregon* (Lots 1 and 2 ESR), dated 23 July 2003 (ERM 2003).

SCOPE OF WORK

Six composite surface soil samples will be collected on each lot for a total of twelve soil samples. Each composite sample will consist of soil from four discrete locations for a total of 24 sampling locations per lot. Samples will be collected from the top 12 inches of soil. Sampling locations were generated randomly, as recommended by Mr. Rodney Struck of ODEQ in a telephone conversation on 19 November 2004. The sampling locations are shown on Figure 3. Each composite sample will be analyzed for COIs identified in the remedial investigation conducted on Lots 3 and 4 and Tract A of the Arkema facility, including:

- Organochlorine pesticides by USEPA Method 8081;
- Semi-volatile organic compounds (SVOCs) by USEPA Method 8270C;
- Total cadmium, chromium, lead, and zinc by USEPA Method 6010B;
- Total petroleum hydrocarbons (TPH) by methods NWTPH-Dx and NWTPH-Gx; and
- Polychlorinated biphenyls (PCBs) by USEPA Method 8082.

Per a telephone conversation with Messrs. Matt McClincy and Rodney Struck of ODEQ on 21 November 2004, it was agreed that analysis of volatile organic compounds (VOCs) would not be required.

Samples will be collected using a stainless-steel hand auger. Soil from four sampling locations will be placed in a stainless-steel bowl and mixed using a stainless-steel spoon. A composite sample will then be collected from the mixed soil. All non-disposable sampling equipment will be decontaminated prior to use and between sample locations. Sampling equipment will be scrubbed with an aqueous solution of laboratory-grade detergent (e.g., Alconox), followed by a rinse with tap water, followed by a rinse with isopropyl alcohol or methanol, followed by a rinse with de-ionized water. To avoid cross contamination between samples, disposable sampling equipment will be disposed of and replaced between each sample location.

Field notes taken during sampling activities will be recorded in the field log book. Samples will be immediately labeled following collection with the required data. Sample data will be entered into the Chain-of-Custody Record to ensure proper tracking and control. Samples will be shipped or delivered to the laboratory in sealed containers and accompanied by the Chain-of-Custody Record.

Following receipt of the sample analytical results, a brief letter-style summary report documenting the results of the investigation will be prepared. This report will present the investigation procedures, and describe any deviations from the methodology described in this Work Plan. The summary report will also present the investigation findings, and analytical results and compare the results to both USEPA Region 9 Industrial Preliminary Remediation Goals (PRGs) and Probable Effect Concentrations (PECs), if appropriate.

Thank you for the continued opportunity to work with Arkema. If you have questions or require additional information, please contact me at (503) 542-8020.

Sincerely,



Jason F. Kraus
Project Manager

JFK/jfk/0020422.00
Attachments

cc: Mr. Doug Loutzenhiser/ATOFINA Chemicals, Inc.

Figures

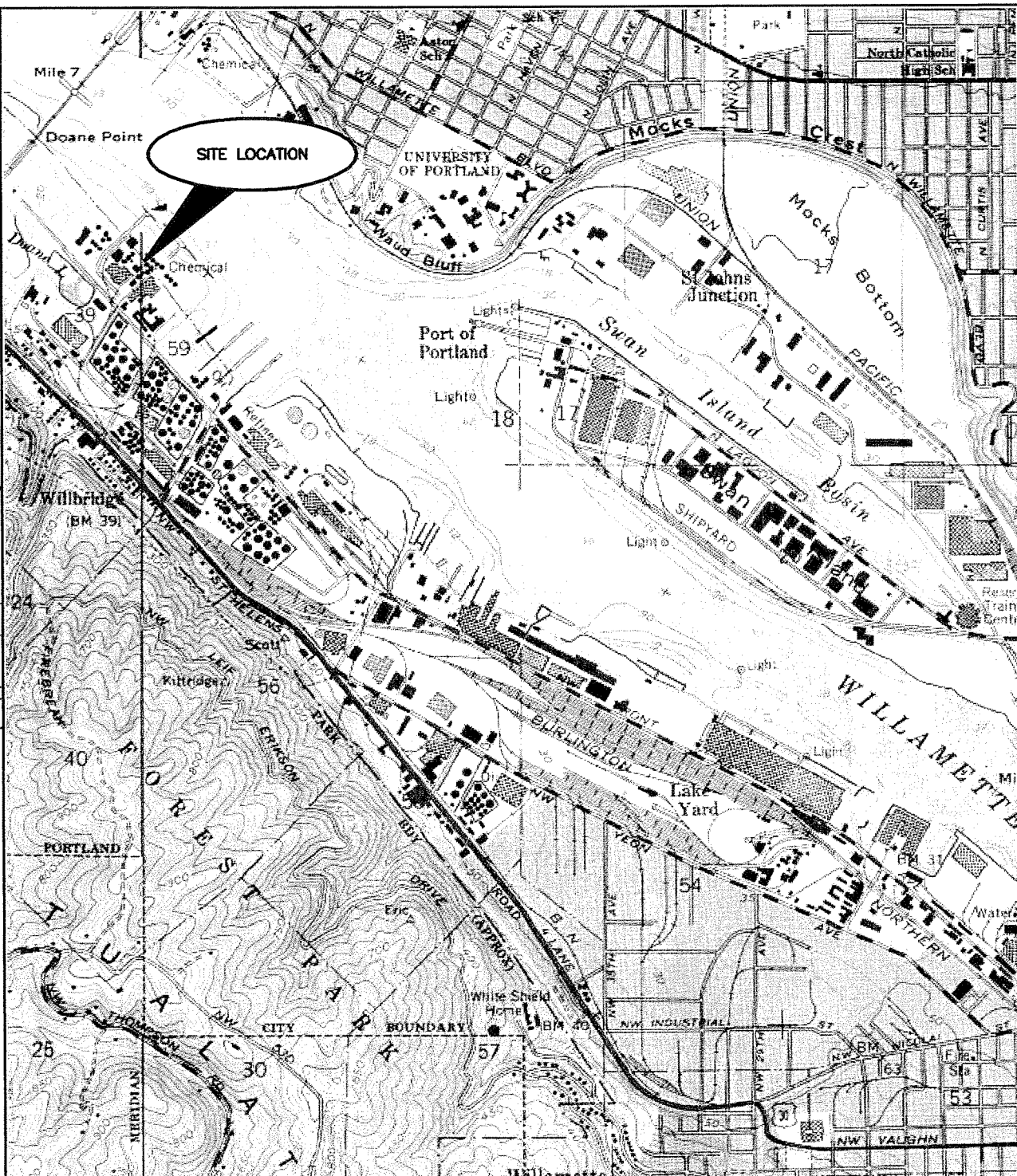
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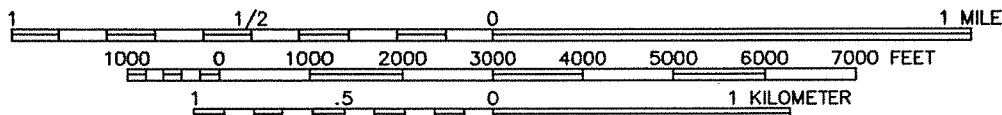
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02/25/02

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R. Olson

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SCALE 1:24,000



References:
U.S.G.S. 7.5 Minute Series (Topographic Portland,
Oregon-Washington)
Dated: 1961; Photorevised 1970 and 1977

Figure 1
Site Location Map
ATOFINA Chemicals, Inc.
Portland, Oregon

ERM 02/02

